

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims:

1. (Currently Amended) A storage system for protecting data on a physical volume at the file system level and permitting access to the data at the physical volume level comprising:

a first interface for file level input/output (I/O);

a second interface for block level I/O;

a plurality of physical volumes upon which logical volumes are represented;

a first controller which processes file level I/O requests; and

a second controller which processes block level I/O requests,

wherein, in response to a file system protect request directed to a particular logical volume, the particular logical volume is protected for a specified period of time and a physical volume of the particular logical volume is also protected for the specified period of time, and

wherein once the particular logical volume is protected, write requests to the particular logical volume or physical volume of the particular logical volume via either the first or second controller are not permitted until expiration of the specified period of time,

wherein information regarding whether or not the particular logical volume is protected is stored in a volume status table having a plurality of entries which indicate statuses of the particular logical volume, and
wherein said entries include a first status indicating a retention period for the particular logical volume, the retention period indicating how long data in the particular logical volume should remain unchanged and thereby determining when data can next be written to the particular logical volume.

2. (Previously Presented) A storage system according to claim 1, wherein the plurality of physical volumes permits creation of a file system to store archived data.

3-5. (Canceled).

6. (Currently Amended) A storage system according to claim 31, wherein said entries indicate a second status of each volume defining whether the volume is exported or un-exported.

7-8. (Canceled)

9. (Original) A storage system according to claim 1, wherein said first controller is a network attached storage controller which processes file level I/O requests.

10. (Currently Amended) A storage system according to claim 1, wherein said second controller is a disk controller ~~network attached storage controller~~ which processes block level I/O requests.

11. (Original) A storage system according to claim 1, wherein said first interface is an Ethernet interface which processes file level I/O requests.

12. (Original) A storage system according to claim 1, wherein said second interface is a Fibre Channel interface which processes block level I/O requests.

13. (Currently Amended) A storage system for protecting data on a physical volume at the file system level and permitting access to the data at the physical volume level comprising:

- a network attached storage (NAS) gateway; and

- a storage system which is connected to said NAS gateway,

- wherein said NAS gateway comprises:

- a first interface for file level I/O,

- a third interface for block level I/O, and

- a first controller which processes file level I/O requests,

- wherein said storage system comprises:

a second interface for block level I/O, said second interface being connected to said third interface,

a plurality of physical volumes upon which logical volumes are represented, and

a second controller which processes block level I/O requests,

wherein, in response to a file system protect request directed to a particular logical volume, the particular logical volume is protected for a specified period of time and a physical volume of the particular logical volume is also protected for the specified period of time, and

wherein once the particular logical volume is protected, write requests to the particular logical volume or physical volume of the particular logical volume via either the first or second controller are not permitted until expiration of the specified period of time

wherein information regarding whether or not the particular logical volume is protected is stored in a volume status table having a plurality of entries which indicate statuses of the particular logical volume, and

wherein said entries include a first status indicating a retention period for the particular logical volume, the retention period indicating how long data in the particular logical volume should remain unchanged and thereby determining when data can next be written to the particular logical volume.

14. (Previously Presented) A storage system according to claim 13, wherein the plurality of physical volumes permits creation of a file system to store archived data.

15-16. (Canceled).

17. (Currently Amended) A storage system according to claim ~~13~~¹⁵, wherein said entries indicate a ~~second~~^{first} status of each volume defining whether the volume is protected or unprotected.

18. (Currently Amended) A storage system according to claim ~~45~~¹³, wherein said entries indicate a second status of each volume defining whether the volume is exported or un-exported.

19-20. (Canceled).

21. (Original) A storage system according to claim 13, wherein said first controller is a network attached storage controller which processes file level I/O requests.

22. (Currently Amended) A storage system according to claim 13, wherein said second controller is a disk controller ~~network attached storage controller~~ which processes block level I/O requests.

23. (Original) A storage system according to claim 13, wherein said first interface is an Ethernet interface which processes file level I/O requests.

24. (Original) A storage system according to claim 13, wherein said second interface is a Fibre Channel interface which processes block level I/O requests.

25. (Currently Amended) A storage system for protecting data on a physical volume at the file system level and permitting access to the data at the physical volume level comprising:

- a first interface for file level input/output (I/O);

- a second interface for block level I/O;

- a plurality of physical volumes upon which logical volumes are represented;

- a first controller which processes file level I/O requests; and

- a second controller which processes block level I/O requests,

wherein, in response to a file system protect request directed to a particular logical volume, the particular logical volume is protected for a specified period of time

and a physical volume of the particular logical volume is also protected for the specified period of time, and

wherein once the particular logical volume is protected, write requests to the particular logical volume or physical volume of the particular logical volume via either the first or second controller are not permitted until expiration of the specified period of time;

wherein information regarding whether or not the particular logical volume is protected is stored in a volume status table having a plurality of entries which indicate statuses of the particular logical volume, and

wherein said entries include a first status indicating a retention period of the particular logical volume, the retention period indicating how long data in the particular logical volume should remain unchanged and thereby determining when data can next be written to the particular logical volume.

26-27. (Canceled).

28. (Currently Amended) A storage system according to claim 2625, wherein said entries indicate a second status of each volume defining whether the volume is exported or un-exported.

29. (Original) A storage system according to claim 25, wherein said first controller is a network attached storage controller which processes file level I/O requests.

30. (Currently Amended) A storage system according to claim 25, wherein said second controller is a disk controller ~~network attached storage controller~~ which processes block level I/O requests.

31. (Original) A storage system according to claim 25, wherein said first interface is an Ethernet interface which processes file level I/O requests.

32. (Original) A storage system according to claim 25, wherein said second interface is a Fibre Channel interface which processes block level I/O requests.

33. (Currently Amended) A storage system for handling input/output (I/O) requests from a plurality of servers, wherein a first server of the servers sends file I/O requests and a second server of the servers sends block I/O requests, comprising:

a storage media including a plurality of volumes, at least one of the volumes stores data of file system;

a first controller, to be coupled to the first server, conducting I/O operations in response to the file I/O requests; and

a second controller, coupled to the storage media, to be coupled to the second server, conducting I/O operations in response to the block I/O requests; and

wherein at least one volume of the volumes which stores the data of file system is set to be write-protected from the second controller when the first controller receives a request from the first server to protect the file system in the storage media for a particular period of time,

wherein information regarding whether or not said at least one volume is protected is stored in a volume status table having a plurality of entries which indicate statuses of said at least one volume, and

wherein said entries include a first status indicating a retention period of said at least one volume, the retention period indicating how long data in said at least one volume should remain unchanged and thereby determining when data can next be written to the volume

34. (Previously Presented) The storage system according to claim 33, wherein the first and second controllers share protection information including a status of protection and a retention period for each of the volumes which is set at file system level by the first controller.

35. (Previously Presented) The storage system according to claim 33, wherein the first controller receives the file I/O requests via a first interface and the second controller receives the block I/O request via a second interface.